

Subject Code: 01CE0102

Subject Name: Computer Workshop

Branch:CE

B.Tech. Sem -I

Objective: Students of Computer Engineering have to work with various hardware and software not only during academia but also in company. Thus, students should get familiar with various hardware, software, operating systems and networking.

This course will provide student a much needed knowledge of computer hardware and networking, enabling them to identify and rectify the onboard computer hardware, software and network related problems. With the help of this course the student will be able to understand the hardware specifications that are required to run operating system and various application programs.

Credits Earned: 1 Credits

Course Outcomes: After completion of this course, student will be able to

- ❖ Understand the basic concept and structure of computer hardware and networking.
- ❖ Identify the existing configuration of the computers and peripherals.
- ❖ Upgrading the system as and when required.
- ❖ Apply their knowledge about computer peripherals to identify / rectify problems onboard.
- ❖ Integrate the PCs into local area network and re-install operating system and various application programs.
- ❖ Manage data backup and restore operations on computer and update application software.

Pre-requisite of course: NA

Teaching and Examination Scheme

Teaching Scheme (Hours)			Credits	Theory Marks			Tutorial/ Practical Marks		Total Marks
Theory	Tutorial	Practical		ESE(E)	IA	CSE	Viva (V)	Term Work (TW)	
0	0	2	1	0	0	0	25	25	50

Content:

Unit	Topics	Contact Hours
1	Assembly of Computer : Introduction to hardware peripherals like RAM, ROM, keyboard, Mouse, processors, etc. Generation of processors. Working of SMPS. Study of various ports. Steps and precautions to assemble computer.	6
2	Assembly of Laptop : Introduction to laptop. Comparison against normal computer. Study of various laptop hardware peripherals like RAM, ROM, keyboard, Mouse, processors, etc. Generation of processors. Study of various ports. Steps and precautions to assemble laptop.	4
3	Computer Network Tools : Introduction to computer network. Study of various topologies. Preparing the network cable using crimping tools and connectors. Study of various network devices like hub, switch, router, etc. Testing of sample network cable in various environments.	4
4	Operating System and Software Installations : Introduction to operating system. Types of operating system (Windows and Linux). Window:-Evolution of operating system. Introduction to software. Types of software (MS office, VLC media player, Win rar), etc. Linux:- Evolution of operating system. Introduction to software. Types of software (open office, web browser, etc.) Case study of Installations step for operating system and application softwares.	6
5	Internet : Introduction and evolution of internet. Study of various internet based services like Email, social network, chat, etc. Introduction to cyber security and cyber laws.	4
6	Server : Introduction to server. Difference between server and normal desktop. Evolution of servers. Study of various servers like Email, data, domain, etc.	4
	Total Hours	28

Reference Books:

1. Hardware Bible by Winn L. Rosch
2. Hardware and Software of Personal Computers by Sanjay K. Bose
3. Fundamentals of Computers by V. Rajaraman
4. Computer Studies - A first course by John Shelley and Roger Hunt
5. Computer Fundamentals, MS Office and Internet & Web Technology by Dinesh Maidasani
6. Modern Computer Hardware Course by M Lotia, P Nair, P Lotia

Supplementary Resources:

1. <http://nptel.ac.in/courses/106105084/>
2. <http://nptel.ac.in/courses/106105081/>
3. <https://www.coursera.org/learn/internet-history>
4. <http://windows.microsoft.com/en-US/windows7/Create-a-system-repair-disc>
5. <http://technet.microsoft.com/library/ee532075.aspx>
6. <http://www.karbosguide.com/>
7. <https://www.youtube.com/watch?v=ZOKsmiLcSlo>
8. <https://www.youtube.com/playlist?list=PLA1DC661DCF743F70>
9. <http://study-ccna.com/>

List of Experiments:

The practical/exercises should be properly designed and implemented with an attempt to develop different types of skills so that students are able to acquire the competency. Following is the list of experiments for guidance.

As it is laboratory course list is as per content given above

Suggested List of Student Activities:

1. Collect various types of computer hardware and prepare summary report
2. Collect various types of computer software and prepare requirement report
3. Collect specifications of similar types of hardware and software and prepare report comparing them.
4. Assemble one computer and install operating system and several software (mini – project given by faculty member)

Open Ended Problems: Apart from above experiments a group of students has to undertake open ended problem/design problem. Few examples of the same are given below.

1. Identify the hardware and software list of the given system.
2. Install and uninstall given software step-by-step.
3. Explain step-by-step installation process for given operating system.
4. Prepare the report of need of programming language in 21st century.

Major Equipments:

Components:

Various types of hardware including RAM, motherboards, Processor, hard disk, etc. along with various operating system like linux and windows based with software like open office, players etc.

Tools:

Screw driver, crimping, soldering iron, multi-meter, cable tester, UTP cable, Connecters, keyboard, mouse, and other USB devices.